

4,565,656, Aug. 12, 1997, Method for controlling configuration of laser induced breakdown and ablation, Mourou, Gerard A., Ann Arbor, Michigan Du, Detao, Ann Arbor, Michigan Dutta, Subrata K., Ann Arbor, Michigan Elner, Victor, Ann Arbor, Michigan Kurtz, Ron, Ann Arbor, Michigan Lichter, Paul R., Ann Arbor, Michigan Liu, Xinbing, Ann Arbor, Michigan Pronko, Peter P., Dexter, Michigan Squier, Jeffrey A., Ann Arbor, Michigan, The Regents of the University of Michigan, Ann Arbor, Michigan (02)

CORE TERMS: pulse, laser, width, breakdown, threshold, beam, fluence, spot, energy, ablation...

LEVEL 1 - 1 OF 1 PATENT

656,186

<=2> GET 1st DRAWING SHEET OF 10

Aug. 12, 1997

Method for controlling configuration of laser induced  
breakdown and ablation

REISSUE: This Patent was reissued on Mar. 19, 2002 as Reissue Patent Re 37,585.

Reissue Application filed Feb. 1, 2001 (O.G. Oct. 16, 2001) Ex. Gp.: 1742;  
Re. S.N. 09/775,106

Reissue Application filed Feb. 1, 2000 (O.G. Jul. 31, 2001) Ex. Gp.: 1742;  
Re. S.N. 09/775,069

CORE TERMS: pulse, laser, width, breakdown, threshold, beam, fluence, spot,  
energy, ablation...

5656186, OR 5,656,186

Your search request has found no CASES.

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**Current session 18/06/2002**

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18/06/02 15\*21\*27

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Estimated cost : 0.62 USD

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Last database update: 2002/06/12 (YYYY/MM/DD) 2002-23/UP (basic update)

Search statement 1

**Query/Command : us5656186/pn****\*\* SS 1: Results 1**

Search statement 2

**Query/Command : prt full nonstop legalall**

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*1/1 PLUSPAT - ©QUESTEL-ORBIT - image***PN** - US5656186 A 19970812 [US5656186]**TI** - (A) Method for controlling configuration of laser induced breakdown and ablation**PA** - (A) UNIV MICHIGAN (US)**IN** - (A) KURTZ RON (US); LIU XINBING (US); DU DETAO (US); DUTTA SUBRATA K (US); ELNER VICTOR (US); LICHTER PAUL R (US); MOUROU GERARD A (US); PRONKO PETER P (US); SQUIER JEFFREY A (US)**AP** - US22496194 19940408 [1994US-0224961]**PR** - US22496194 19940408 [1994US-0224961]

**IC** - (A) B23K-026/02  
**EC** - A61B-018/20  
B23K-026/06F  
B23K-026/36  
B23K-026/38B  
B23K-026/40B  
**PCL** - ORIGINAL (O) : 219121690  
**DT** - Corresponding document  
**CT** - US4087672; US4114018; US4464761; US4579430; US4630274; US4665913; US4675500; US4727381; US4729372; US4732473; US4733660; US4764930; US4838679; US4839493; US4848340; US4881808; US4901718; US4907586; US4925523; US4930505; US4942586; US4988348; US5062702; US5093548; US5098426; US5141506; US5207668; US5208437; US5219343; US5235606; US5246435; US5269778; US5289407; US5312396; US5335258; US5348018; US5389786; US5454902; US5558789; DE4119024 A1; WO8908529  
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International Search Report Form PCT/ISA/210 Dated 31 Jul. 1995 and Mailed 4 Aug. 1995.

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**STG** - (A) United States patent

**AB** - In one aspect the invention provides a method for laser induced breakdown of a material with a pulsed laser beam where the material is characterized by a relationship of fluence breakdown threshold (F<sub>th</sub>) versus laser beam pulse width (T) that exhibits an abrupt, rapid, and distinct change or at least a clearly detectable and distinct change in slope at a predetermined laser pulse width value. The method comprises generating a beam of laser pulses in which each pulse has a pulse width equal to or less than the predetermined laser pulse width value. The beam is focused to a point at or beneath the surface of a material where laser induced breakdown is desired. The beam may be used in combination with a mask in the beam path. The beam or mask may be moved in the x, y, and Z directions to produce desired features. The technique can produce features smaller than the spot size and Rayleigh range due to enhanced damage threshold accuracy in the short pulse regime.

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1/1 LGST - ©LEGSTAT

**PN** - US 5656186 [US5656186]

**AP** - US 224961/94 19940408 [1994US-0224961]

**DT** - US-P

**ACT** - 19940408 US/AE-A  
APPLICATION DATA (PATENT)  
US 224961/94 19940408 [1994US-0224961]

19940902 US/AS02

ASSIGNMENT OF ASSIGNOR'S INTEREST

REGENTS OF THE UNIVERSITY OF MICHIGAN, THE WOLVERINE TOWER,  
ROOM 2071 3003 S. ST \* MOUROU, GERARD A. : 19940407; DU, DETAQ :  
19940407; DUTTA, SUBRATA K. : 19940407; ELNER, VICTOR : 19940407; KURTZ,  
RON : 19940407;

19970812 US/A

PATENT

19990928 US/RF

REISSUE APPLICATION FILED

19990804

20010731 US/RF

REISSUE APPLICATION FILED

20000201

20011016 US/RF

REISSUE APPLICATION FILED

20010201

**UP** - 2001-44

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*1/1 CRXX - ©CLAIMS/RRX*

**PN** - 5,656,186 A 19970812 [US5656186]  
**PA** - Michigan, University of  
**ACT** - 19990804 REISSUE REQUESTED  
ISSUE DATE OF O.G.: 19990928  
REISSUE REQUEST NUMBER: 09/366685  
EXAMINATION GROUP RESPONSIBLE FOR REISSUEPROCESS: 1742  
Reissue Patent Number: USRE37585

20000201 REISSUE REQUESTED  
ISSUE DATE OF O.G.: 20010731  
REISSUE REQUEST NUMBER: 09/775069  
EXAMINATION GROUP RESPONSIBLE FOR REISSUEPROCESS: 1742

Reissue Patent Number:

20010201 REISSUE REQUESTED  
ISSUE DATE OF O.G.: 20011016  
REISSUE REQUEST NUMBER: 09/775106  
EXAMINATION GROUP RESPONSIBLE FOR REISSUEPROCESS: 1742

Reissue Patent Number:

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*1/14 PAST - ©Thomson Derwent*

**AN** - 200142-001612  
**PN** - 5656186 A [US5656186]  
**OG** - 2001-10-16  
**ACT** - REISSUE APPLICATION FILED

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*2/14 PAST - ©Thomson Derwent*

**AN** - 200131-001297  
**PN** - 5656186 A [US5656186]  
**OG** - 2001-07-31  
**ACT** - REISSUE APPLICATION FILED

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3 / 14 PAST - ©Thomson Derwent

**AN** - 199951-002770  
**PN** - 5656186 A [US5656186]  
**ACT** - PATENT SUIT

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4 / 14 PAST - ©Thomson Derwent

**AN** - 199950-002719  
**PN** - 5656186 A [US5656186]  
**ACT** - PATENT SUIT

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5 / 14 PAST - ©Thomson Derwent

**AN** - 199949-002630  
**PN** - 5656186 A [US5656186]  
**ACT** - PATENT SUIT

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6 / 14 PAST - ©Thomson Derwent

**AN** - 199948-002873  
**PN** - 5656186 A [US5656186]  
**ACT** - PATENT SUIT

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7 / 14 PAST - ©Thomson Derwent

**AN** - 199947-002840  
**PN** - 5656186 A [US5656186]  
**ACT** - PATENT SUIT

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**AN** - 199946-002899  
**PN** - 5656186 A [US5656186]  
**ACT** - PATENT SUIT

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**AN** - 199945-002802  
**PN** - 5656186 A [US5656186]  
**ACT** - PATENT SUIT

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10 / 14 PAST - ©Thomson Derwent

**AN** - 199944-002326  
**PN** - 5656186 A [US5656186]  
**ACT** - PATENT SUIT

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**AN** - 199943-002793  
**PN** - 5656186 A [US5656186]  
**ACT** - PATENT SUIT

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**AN** - 199941-002696  
**PN** - 5656186 A [US5656186]  
**ACT** - PATENT SUIT

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**AN** - 199939-000730  
**PN** - 5656186 A [US5656186]  
**OG** - 1999-09-28  
**ACT** - REISSUE APPLICATION FILED

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14 / 14 PAST - ©Thomson Derwent

**AN** - 199937-001481  
**PN** - 5656186 A [US5656186]  
**ACT** - PATENT SUIT

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1 / 1 LITA - ©Thomson Derwent

**AN** - P1999-37-42  
**FS** - PATENT (P)  
**PN** - US5656186 19970812 (Utility)  
**PF** - Positive Lights Incorporated  
**DF** - Clark MXR Incorporated  
**CT** - CA, Northern Dist.  
**DN** - C-99-3937 JL  
**FD** - 1999-08-23  
**ACT** - A complaint was filed.

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1 Patent Groups

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**TI** - VERFAHREN ZUM KONFIGURATIONSTEUERN VON LASERINDUZIERTEM  
ZERSTOEREN UND ABTRAGEN  
**IN** - MOUROU GERARD A [US]; DU DETAO [US]; DUTTA SUBRATA K [US]; ELNER  
VICTOR [US]; KURTZ RON [US]; LICHTER PAUL [US]; LIU XINBING [US];  
PRONKO PETER P [US]; SQUIER JEFFREY A [US]  
**PA** - UNIV MICHIGAN [US]  
**AP** - AT 95916130/95-EP 19950329 [1995EP-0916130]  
**PR** - US 224961/94-A 19940408 [1994US-0224961]  
**IC** - B23K-026/00; A61B-017/22

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**DT** - AT-R  
**ACTE** - 19971115 AT/REF-P  
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(EP 754103 19971105 [EP-754103])  
  
19980415 AT/UEP [+]  
PUBLICATION OF TRANSLATION OF EUROPEEN PATENT SPECIFICATION  
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**AP** - EP 95916130/95 19950329 [1995EP-0916130]  
**DT** - EP-P  
**ACTE** - 19950329 EP/AE-A  
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19970122 EP/AK-A1 [+]  
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REPORT:  
AT BE CH DE DK ES FR GB GR IE IT LI LU MC NL PT SE  
  
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PUBLICATION OF APPLICATION WITH SEARCH REPORT  
  
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REQUEST FOR EXAMINATION FILED  
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FIRST EXAMINATION REPORT  
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DESIGNATED CONTRACTING STATES MENTIONED IN A PATENT  
SPECIFICATION:

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PATENT SPECIFICATION

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(AT 159880 19971115 [ATE159880])

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CH: NEW AGENT

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STUDIO TORTA S.R.L.

19971211 EP/REF-P

CORRESPONDS TO:

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FR: TRANSLATION FILED

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20020101 EP/REG; GB/IF02 [+]  
GB: EUROPEAN PATENT IN FORCE AS OF 2002-01-01  
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UP - 2002-17

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PN - AU 22741/95 A1 19951030 [AU9522741]  
TI - METHOD FOR CONTROLLING CONFIGURATION OF LASER INDUCED  
BREAKDOWN AND ABLATION  
IN - MOUROU GERARD A; DU DETAQ; DUTTA SUBRATA K; ELNER VICTOR;  
KURTZ RON; LICHTER PAUL; LIU XINBING; PRONKO PETER P; SQUIER  
JEFFREY A  
PA - UNIV MICHIGAN  
AP - AU 22741/95-A 19950329 [1995AU-0022741]  
PR - US 224961/94-A 19940408 [1994US-0224961]  
WO 9503863/95(US)-W 19950329 [1995WO-US03863]  
IC - B23K-026/00; A61B-017/22

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**3/12 INPADOC - ©INPADOC**

**PN** - AU 684633 B2 19971218 [AU-684633]  
**TI** - METHOD FOR CONTROLLING CONFIGURATION OF LASER INDUCED  
BREAKDOWN AND ABLATION  
**IN** - MOUROU GERARD A; DU DETAO; DUTTA SUBRATA K; ELNER VICTOR;  
KURTZ RON; LICHTER PAUL; LIU XINBING; PRONKO PETER P; SQUIER  
JEFFREY A  
**PA** - UNIV MICHIGAN  
**AP** - AU 22741/95-A 19950329 [1995AU-0022741]  
**PR** - US 224961/94-A 19940408 [1994US-0224961]  
WO 9503863/95(US)-W 19950329 [1995WO-US03863]  
**IC** - B23K-026/00; A61B-017/22

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**4/12 INPADOC - ©INPADOC**

**PN** - CA 2186451 AA 19951019 [CA2186451]  
**TI** - METHOD FOR CONTROLLING CONFIGURATION OF LASER INDUCED  
BREAKDOWN AND ABLATION  
**LA** - ENG  
**IN** - MOUROU GERARD A [US]; DU DETAO [US]; DUTTA SUBRATA K [US]; ELNER  
VICTOR [US]; KURTZ RON [US]; LICHTER PAUL [US]; LIU XINBING [US];  
PRONKO PETER P [US]; SQUIER JEFFREY A [US]  
**PA** - UNIV MICHIGAN [US]  
**AP** - CA 2186451/95-A 19950329 [1995CA-2186451]  
**PR** - US 224961/94-A 19940408 [1994US-0224961]  
**IC** - B23K-026/00; A61B-017/22; A61B-017/36

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**PN** - CA 2186451 [CA2186451]  
**DT** - CA-P  
**ACTE** - 19960925 CA/REFW-P  
CORRESPONDS TO PCT APPLICATION  
<WO 9527587> [WO9527587]  
**UP** - 1998-31

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**5/12 INPADOC - ©INPADOC**

**PN** - DE 69500997 C0 19971211 [DE69500997]  
**TI** - VERFAHREN ZUM KONFIGURATIONSTEUERN VON LASERINDUZIERTEM  
ZERSTOEREN UND ABTRAGEN  
**IN** - MOUROU GERARD [US]; DU DETAO [US]; DUTTA SUBRATA [US]; ELNER  
VICTOR [US]; KURTZ RON [US]; LICHTER PAUL [US]; LIU XINMING [US];  
PRONKO PETER [US]; SQUIER JEFFREY [US]  
**PA** - UNIV MICHIGAN [US]  
**AP** - DE 69500997/95-A 19950329 [1995DE-6000997]  
**PR** - US 224961/94-A 19940408 [1994US-0224961]  
WO 9503863/95(US)-W 19950329 [1995WO-US03863]  
**IC** - B23K-026/00; A61B-017/22

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**1/2 LEGALI - ©LEGSTAT**

**PN** - DE 69500997 [DE69500997]  
**DT** - DE-P  
**ACTE** - 19971211 DE/REF-P  
CORRESPONDS TO  
(EP 754103 19971211 [EP-754103])

19980430 DE/8373  
TRANSLATION OF PATENT DOCUMENT OF EUROPEAN PATENT WAS  
RECEIVED AND HAS BEEN PUBLISHED

19981203 DE/8364 [+]  
NO OPPOSITION DURING TERM OF OPPosition

**UP** - 1998-51

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**2/2 LEGALI - ©LEGSTAT**

**PN** - EP 754103 [EP-754103]  
**AP** - EP 95916130/95 19950329 [1995EP-0916130]  
**DT** - EP-P  
**ACTE** - 19950329 EP/AE-A  
EP-APPLICATION  
EP 95916130/95 19950329 [1995EP-0916130]

19970122 EP/AK-A1 [+]  
DESIGNATED CONTRACTING STATES IN AN APPLICATION WITH SEARCH  
REPORT:  
AT BE CH DE DK ES FR GB GR IE IT LI LU MC NL PT SE

19970122 EP/A1 [+]  
PUBLICATION OF APPLICATION WITH SEARCH REPORT

19970122 EP/17P [+]  
REQUEST FOR EXAMINATION FILED  
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FIRST EXAMINATION REPORT  
970326

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DESIGNATED CONTRACTING STATES MENTIONED IN A PATENT  
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AT BE CH DE DK ES FR GB GR IE IT LI LU MC NL PT SE

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IT: TRANSLATION FOR A EP PATENT FILED  
STUDIO TORTA S.R.L.

19971211 EP/REF-P  
CORRESPONDS TO:  
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6/12 INPADOC - ©INPADOC

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TI - VERFAHREN ZUM KONFIGURATIONSTEUERN VON LASERINDUZIERTEM  
ZERSTOEREN UND ABTRAGEN  
IN - MOUROU GERARD [US]; DU DETAO [US]; DUTTA SUBRATA [US]; ELNER  
VICTOR [US]; KURTZ RON [US]; LICHTER PAUL [US]; LIU XINBING [US];  
PRONKO PETER [US]; SQUIER JEFFREY [US]  
PA - UNIV MICHIGAN [US]  
AP - DE 69500997/95-A 19950329 [1995DE-6000997]  
PR - US 224961/94-A 19940408 [1994US-0224961]  
WO 9503863/95(US)-W 19950329 [1995WO-US03863]  
IC - B23K-026/00; A61B-017/22

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**1/2 LEGALI - ©LEGSTAT**

**PN** - DE 69500997 [DE69500997]

**DT** - DE-P

**ACTE** - 19971211 DE/REF-P  
CORRESPONDS TO  
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19980430 DE/8373

TRANSLATION OF PATENT DOCUMENT OF EUROPEAN PATENT WAS  
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19981203 DE/8364 [+]

NO OPPOSITION DURING TERM OF OPPPOSITION

**UP** - 1998-51

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**2/2 LEGALI - ©LEGSTAT**

**PN** - EP 754103 [EP-754103]

**AP** - EP 95916130/95 19950329 [1995EP-0916130]

**DT** - EP-P

**ACTE** - 19950329 EP/AE-A  
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DESIGNATED CONTRACTING STATES IN AN APPLICATION WITH SEARCH  
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AT BE CH DE DK ES FR GB GR IE IT LI LU MC NL PT SE

19970122 EP/A1 [+]

PUBLICATION OF APPLICATION WITH SEARCH REPORT

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REQUEST FOR EXAMINATION FILED  
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19970514 EP/17Q [+]

FIRST EXAMINATION REPORT  
970326

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DESIGNATED CONTRACTING STATES MENTIONED IN A PATENT  
SPECIFICATION:

AT BE CH DE DK ES FR GB GR IE IT LI LU MC NL PT SE

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PATENT SPECIFICATION

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CORRESPONDS TO:  
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UP - 2002-17

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7/12 INPADOC - ©INPADOC

PN - EP 754103 A1 19970122 [EP-754103]  
TI - METHOD FOR CONTROLLING CONFIGURATION OF LASER INDUCED  
BREAKDOWN AND ABLATION  
LA - ENG  
IN - MOUROU GERARD A [US]; DU DETAO [US]; DUTTA SUBRATA K [US]; ELNER  
VICTOR [US]; KURTZ RON [US]; LICHTER PAUL [US]; LIU XINBING [US];  
PRONKO PETER P [US]; SQUIER JEFFREY A [US]  
PA - UNIV MICHIGAN [US]  
AP - EP 95916130/95-A 19950329 [1995EP-0916130]  
PR - WO 9503863/95(US)-W 19950329 [1995WO-US03863]  
US 224961/94-A 19940408 [1994US-0224961]  
IC - B23K-026/00; A61B-017/22  
DS - AT\* BE\* CH\* DE\* DK\* ES\* FR\* GB\* GR\* IE\* IT\* LI\* LU\* MC\* NL\* PT\* SE\*

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1/3 LEGALI - ©LEGSTAT

PN - DE 69500997 [DE69500997]  
DT - DE-P  
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CORRESPONDS TO  
(EP 754103 19971211 [EP-754103])

19980430 DE/8373  
TRANSLATION OF PATENT DOCUMENT OF EUROPEAN PATENT WAS  
RECEIVED AND HAS BEEN PUBLISHED

19981203 DE/8364 [+]  
NO OPPOSITION DURING TERM OF OPPOSITION

UP - 1998-51

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**2 / 3 LEGALI - ©LEGSTAT****PN** - AT 159880 [ATE159880]**DT** - AT-R**ACTE** - 19971115 AT/REF-P  
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PUBLICATION OF TRANSLATION OF EUROPEEN PATENT SPECIFICATION**UP** - 1998-17

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**3 / 3 LEGALI - ©LEGSTAT****PN** - EP 754103 [EP-754103]**AP** - EP 95916130/95 19950329 [1995EP-0916130]**DT** - EP-P**ACTE** - 19950329 EP/AE-A  
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AT BE CH DE DK ES FR GB GR IE IT LI LU MC NL PT SE19971105 EP/B1 [+]  
PATENT SPECIFICATION19971105 EP/REF-R [+]  
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IT: TRANSLATION FOR A EP PATENT FILED  
STUDIO TORTA S.R.L.

19971211 EP/REF-P  
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8/12 INPADOC - ©INPADOC

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BREAKDOWN AND ABLATION  
LA - ENG  
IN - MOUROU GERARD A [US]; DU DETAO [US]; DUTTA SUBRATA K [US]; ELNER  
VICTOR [US]; KURTZ RON [US]; LICHTER PAUL [US]; LIU XINBING [US];  
PRONKO PETER P [US]; SQUIER JEFFREY A [US]  
PA - UNIV MICHIGAN [US]  
AP - EP 95916130/95-A 19950329 [1995EP-0916130]  
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IC - B23K-026/00; A61B-017/22  
DS - AT\* BE\* CH\* DE\* DK\* ES\* FR\* GB\* GR\* IE\* IT\* LI\* LU\* MC\* NL\* PT\* SE\*

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19980430 DE/8373  
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RECEIVED AND HAS BEEN PUBLISHED

19981203 DE/8364 [+]  
NO OPPOSITION DURING TERM OF OPPosition

UP - 1998-51

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PN - AT 159880 [ATE159880]

DT - AT-R

ACTE - 19971115 AT/REF-P  
CORRESPONDS TO EP-PATENT  
(EP 754103 19971105 [EP-754103])

19980415 AT/UEP [+]  
PUBLICATION OF TRANSLATION OF EUROPEEN PATENT SPECIFICATION

UP - 1998-17

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AP - EP 95916130/95 19950329 [1995EP-0916130]

DT - EP-P

ACTE - 19950329 EP/AE-A  
EP-APPLICATION  
EP 95916130/95 19950329 [1995EP-0916130]

19970122 EP/AK-A1 [+]  
DESIGNATED CONTRACTING STATES IN AN APPLICATION WITH SEARCH  
REPORT:  
AT BE CH DE DK ES FR GB GR IE IT LI LU MC NL PT SE

19970122 EP/A1 [+]  
PUBLICATION OF APPLICATION WITH SEARCH REPORT

19970122 EP/17P [+]  
REQUEST FOR EXAMINATION FILED  
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FIRST EXAMINATION REPORT  
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DESIGNATED CONTRACTING STATES MENTIONED IN A PATENT  
SPECIFICATION:  
AT BE CH DE DK ES FR GB GR IE IT LI LU MC NL PT SE

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STUDIO TORTA S.R.L.

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(DE 69500997 19971211 [DE69500997])

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PR - WO 9503863/95(US)-W 19950329 [1995WO-US03863]  
US 224961/94-A 19940408 [1994US-0224961]  
IC - B23K-026/00; A61B-017/36

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PN - US 37585 E1 20020319 [US--37585]  
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IC - B23K-026/02; B23K-026/40

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TI - METHOD FOR CONTROLLING CONFIGURATION OF LASER INDUCED  
BREAKDOWN AND ABLATION  
IN - MOUROU GERARD A [US]; DU DETAO [US]; DUTTA SUBRATA K [US]; ELNER  
VICTOR [US]; KURTZ RON [US]; LICHTER PAUL R [US]; LIU XINBING [US];  
PRONKO PETER P [US]; SQUIER JEFFREY A [US]  
PA - UNIV MICHIGAN [US]  
AP - US 224961/94-A 19940408 [1994US-0224961]  
PR - US 224961/94-A 19940408 [1994US-0224961]  
IC - B23K-026/02

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**PN** - US 5656186 [US5656186]

**AP** - US 224961/94 19940408 [1994US-0224961]

**DT** - US-P

**ACTE** - 19940408 US/AE-A

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19940902 US/AS02

ASSIGNMENT OF ASSIGNOR'S INTEREST

REGENTS OF THE UNIVERSITY OF MICHIGAN, THE WOLVERINE TOWER,  
ROOM 2071 3003 S. ST \* MOUROU, GERARD A. : 19940407; DU, DETAQ :  
19940407; DUTTA, SUBRATA K. : 19940407; ELNER, VICTOR : 19940407; KURTZ,  
RON : 19940407;

19970812 US/A

PATENT

19990928 US/RF

REISSUE APPLICATION FILED

19990804

20010731 US/RF

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20000201

20011016 US/RF

REISSUE APPLICATION FILED

20010201

**UP** - 2001-44

**PN** - WO 9527587 A1 19951019 [WO9527587]  
**TI** - METHOD FOR CONTROLLING CONFIGURATION OF LASER INDUCED  
BREAKDOWN AND ABLATION  
**LA** - ENG  
**IN** - MOUROU GERARD A [US]; DU DETAQ [US]; DUTTA SUBRATA K [US]; ELNER  
VICTOR [US]; KURTZ RON [US]; LICHTER PAUL [US]; LIU XINBING [US];  
PRONKO PETER P [US]; SQUIER JEFFREY A [US]  
**PA** - UNIV MICHIGAN [US]; MOUROU GERARD A [US]; DETAQ DU [US]; DUTTA  
SUBRATA K [US]; ELNER VICTOR [US]; KURTZ RON [US]; LICHTER PAUL  
[US]; LIU XINBING [US]; PRONKO PETER P [US]; SQUIER JEFFREY A [US]  
**AP** - WO US 9503863/95(US)-A 19950329 [1995WO-US03863]  
**PR** - US 224961/94-A1 19940408 [1994US-0224961]  
**IC** - B23K-026/00; A61B-017/22  
**DS** - AM\* AT\* AU\* BB\* BG\* BR\* BY\* CA\* CH\* CN\* CZ\* DE\* DK\* EE\* ES\* FI\* GB\*  
GE\* HU\* IS\* JP\* KE\* KG\* KP\* KR\* KZ\* LK\* LR\* LT\* LU\* LV\* MD\* MG\* MN\*  
MW\* MX\* NL\* NO\* NZ\* PL\* PT\* RO\* RU\* SD\* SE\* SG\* SI\* SK\* TJ\* TM\* TT\*  
UA\* UG\* US\* UZ\* VN\* KE MW SD SZ UG AT BE CH DE DK ES FR GB GR IE IT  
LU MC NL PT SE BF BJ CF CG CI CM GA GN ML MR NE SN TD TG

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1/2 LEGALI - ©LEGSTAT

**PN** - CA 2186451 [CA2186451]  
**DT** - CA-P  
**ACTE** - 19960925 CA/REFW-P  
CORRESPONDS TO PCT APPLICATION  
<WO 9527587> [WO9527587]  
**UP** - 1998-31

2/2 LEGALI - ©LEGSTAT

PN - WO 9527587 [WO9527587]

AP - WO 9503863/95(US) 19950329 [1995WO-US03863]

DT - WO-P

ACTE - 19950329 WO/AE-A  
APPLICATION DATA  
WO 9503863/95(US) 19950329 [1995WO-US03863]

19951019 WO/AK-A1 [+]

DESIGNATED STATES CITED IN A PUBLISHED APPLICATION WITH SEARCH REPORT

AM AT AU BB BG BR BY CA CH CN CZ DE DK EE ES FI GB GE HU IS JP KE KG KP KR KZ LK LR LT LU LV MD MG MN MW MX NL NO NZ PL PT RO RU SD SE SG SI SK TJ TM TT UA UG US UZ VN

19951019 WO/AL-A1 [+]

DESIGNATED COUNTRIES FOR REGIONAL PATENTS CITED IN A PUBLISHED APPLICATION WITH SEARCH REPORT

KE MW SD SZ UG AT BE CH DE DK ES FR GB GR IE IT LU MC NL PT SE BF BJ CF CG CI CM GA GN ML MR NE SN TD TG

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